

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. After amending the claims as set forth above, claims 15-17, 20-21, 24, 27-28, and 31 are now pending in this application.

Applicant wishes to thank the Examiner for the careful consideration given to the claims.

Rejection based on Andersson

Claims 15-17, 20-21, 24, 27-28, and 31 are rejected under 35 U.S.C. 103(a) as allegedly being obvious over WO 01/67021 ("Andersson"). For at least the following reasons, this rejection is traversed.

Claim 15 (as amended) recites, among other things, a heat exchanger comprising several tray-shaped plates, which are placed on top of one another, are sealed together on their peripheral edges, and are provided with passages. Two continuous flow channels are each formed from the passages that lie essentially above one another; wherein each flow channel traverses the plates. The two flow channels are traversed by different media from a single admission side to a single discharge side. Each flow channel has essentially elongate cross sections at the admission and discharge sides, each having a length L, a width B, and a length to width ratio L/B of between 1.5 and 3. The admission and discharge sides of the two flow channels are arranged in a 2 x 2 array with no further flow channels therebetween. Andersson does not teach or suggest this combination of features.

For example, Andersson does not teach or suggest two flow channels that have a single admission side and a single discharge side, wherein the admission and discharge sides of the two flow channels are arranged in a 2 x 2 array with no further flow channels therebetween. Figs. 1-2 of Andersson disclose two inlet ports 11 and 21 and four outlet ports 12-13 and 22-23. Figs. 6-7 of Andersson shows similar arrangements with six ports. Because Andersson discloses six ports, Andersson does not teach or suggest two flow channels that each have a single admission side and a single discharge side, wherein the admission and discharge sides of the two flow channels are arranged in a 2 x 2 array with no further flow channels therebetween. Accordingly, claim 15 is allowable.

Also, Andersson does not teach or suggest that each flow channel has an essentially elongate cross section at admission and discharge sides because all the embodiments of Andersson show ports that are circular, such as ports 12-13 in Fig. 1, ports 121-124 in Fig. 6, and ports 221-224 in Fig. 7.

The PTO has rejected claim 15 by asserting that “the requirement that the flow channels have an elongate cross section at admission and discharge sides is not considered to require the use of non-circular ports leading into the device as a whole, since the flow channels are formed by the holes in the plates.” (Page 3 of the Office Action.) This assertion confuses the nature of the ports 12-13, 121-124, and 221-224 of Andersson because these ports are flow channels, as the term is used in the current Application. For example, the ports 12-13 are described as “outlet ports” in plate 1 and are through holes as clearly seen in FIGS. 1-2 of Andersson and described on page 10, line 1-10 of Andersson. The same is true for the ports 121-124 in Fig. 6 and the ports 221-224 in Fig. 7. As the PTO agrees that “the flow channels are formed by the holes in the plate” (page 3 of the Office Action), it follows that these holes forming the ports 12-13, 121-124, and 221-224 are part of the flow channels. Claim 15 requires that “each flow channel has essentially elongate cross sections at the admission and discharge sides,” and the ports 12-13, the ports 121-124, and the ports 221-224 of Andersson do not have an elongate cross section. Because not each flow channel of Andersson has an elongate cross section at admission and discharge sides, Andersson does not teach or suggest all the features of claim 15.

Furthermore, Andersson does not teach or suggest the claimed length to width ratio of between 1.5 and 3. It is asserted that Figs. 1 and 6-7 of Andersson appear to depict passages having the specified length to width ratio. (Pages 2-3 of the Office Action.) However, circular ports (such as the ports 12-13, the ports 121-124, and the ports 221-224) cannot have the claimed length to width ratio.

It is asserted that “[i]t would have been obvious...to use any desired length to width ratio for the passages, to be determined by the intended use of the device.” (Paragraph 3 of the Office Action.) Applicants note, however, that the Supreme Court in *KSR Int’l Co. v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007) has not removed the requirement that the prior art reference (or references when combined) must teach or suggest all the claim limitations. Indeed, *KSR* emphasized cases where all features are known. Furthermore, the exemplary

rationales listed in MPEP 2143 suggests that all elements (when the references are combined) need to be known in the art to support a conclusion of obviousness. Thus, the PTO is not relieved of its responsibility of finding prior art teaching or suggesting all the features of the claimed invention to establish a prima facie case of obviousness. The assertion that “[i]t would have been obvious...to use any desired length to width ratio for the passages, to be determined by the intended use of the device” is no substitute for finding prior art for establishing the claimed length to width ratio for each flow channel in the prior art along with the other features of claim 15. Accordingly, claim 15 is allowable over Andersson.

Claims 16-17, 20-21, 24, and 27-28 depend from and contain all the features of claim 15, and are allowable for the same reasons as claim 15, without regard to the further patentable features contained therein.

Claim 31 recites, among other things, a plate for a heat exchanger comprising two passages, wherein the two passages comprises parts of separate flow passages in the heat exchanger that are traversed by different media. Each passage has a single admission side and a single discharge side; wherein each passage has essentially elongate cross-sections at its respective admission and discharge sides. The elongate cross sections each has a length L, a width B, and a length to width ratio L/B of between 1.5 and 3. The admission and discharge sides of the two passages are arranged in a 2 x 2 array with no further flow channels therebetween.

Andersson does not teach or suggest two passages each having a single admission side and a single discharge side, wherein the admission and discharge sides of the two passages are arranged in a 2 x 2 array with no further flow channels therebetween because Andersson discloses arrangements with six ports. Also, Andersson does not teach or suggest that each passage has essentially elongate cross-sections at its respective admission and discharge sides because all the embodiments of Andersson show some ports that are circular. Furthermore, Andersson does not teach or suggest the claimed length to width ratio of between 1.5 and 3. Accordingly, claim 31 is allowable over Andersson.

For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Conclusion


Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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